Data, Modeling, and Analysis to Support Flight Planning for INTEX-NA

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The support activity outlined here will include the provision of data relevant to flight planning for the DC-8 as well as the entire ICARTT team. This will include the provision of real-time lightning data for use in flight planning as well as meteorological imagery useful to monitor evolving conditions. We will assume primary responsibility for the collection, analysis, and dissemination of data from intercomparison flights needed to evaluate the success of this critical objective. Quick-look data analysis and modeling in the field will also be pursued to aid in determining whether flight objectives have been met. Specific roles are as follows:

James Crawford (INTEX Data Management): Participate in flight planning. Perform data analysis and modeling to evaluate and monitor the accomplishment of mission objectives. Provide Long Range and National Lightning Detection Network data through agreement with NASA Marshall Space Flight Center to aid in planning flights to sample convective outflow.

Gao Chen (Intercomparison Data Management): Collection, analysis, and dissemination of intercomparison data.

David Westberg (Meteorological Support): Provide satellite imagery and general meteorological information to support flight planning.

Specific Support Activities:

Lightning Data.
Real-time lightning data will be provided from the Long Range (LR) and National Lightning Detection Network (NLDN). This data will be critical to planning flights to meet the objective of sampling convective outflow. LR and NLDN data will be obtained from the Global Hydrology Resources Center at NASA Marshall Space Flight Center from May-August, 2004. This data will be available to all ICARTT investigators. While raw data will be available, data files and images giving maps of lightning flash data gridded to a resolution of 0.5 x 0.5 degrees (see Figure 1) will also be produced (see http://www-air.larc.nasa.gov/missions/intexna/intexna.htm).

Meteorological Satellite Imagery.
David Westberg will download and archive McIDAS satellite imagery and weather products off the Internet on a daily basis. Hourly, 4-km resolution, visible, infrared, and water vapor satellite imagery in McIDAS format will be archived with flight track overlays. Other weather products ranging from daily precipitation images to satellite derived wind plots will be collected as well. The full scope of weather products collected by Mr. Westberg during field missions can be found at the following URL's:

http://asd-www.larc.nasa.gov/David/gtetracepdc8wxpg.html
http://asd-www.larc.nasa.gov/David/gtetracepp3bwxpg.html
http://asd-www.larc.nasa.gov/David/gtetracepinfo.html

http://asd-www.larc.nasa.gov/David/gtepemtropbinfo.html

Intercomparison Data.
Gao Chen will serve as the central point of contact for intercomparison data for ICARTT. He will operate in accordance with the ICARTT measurement intercomparison implementation plan (http://www.al.noaa.gov/ICARTT/StudyCoordination/WGMC.shtml). He will receive and process all intercomparison data before it is released to the general Science Team.

Data analysis and modeling.
Quick-look data analysis and modeling in the field will be employed to monitor the accomplishment of mission objectives. Such analyses will be conducted within the caveats presented by preliminary data. Quick merges of field data will also be produced and shared with the Science Team.